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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/495,207	01/31/2000	Robert E. Robotham	1400.4100242	4551

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ROSS D. SNYDER & ASSOCIATES, INC.  
115 WILD BASIN RD.  
SUITE 107  
AUSTIN, TX 78746

EXAMINER

PHILPOTT, JUSTIN M

ART UNIT	PAPER NUMBER
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2665

DATE MAILED: 07/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/495,207

Applicant(s)

ROBOTHAM, ROBERT E.

Examiner

Justin M Philpott

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 22 April 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 January 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

### *Priority*

1. In the instant continuation-in-part application, Applicant claims priority to U.S. Patent Application Serial No. 09/303,352, filed on April 30, 1999. Applicant is reminded that any claim in a continuation-in-part application which is directed *solely* to subject matter adequately disclosed under 35 U.S.C. 112 in the parent nonprovisional application is entitled to the benefit of the filing date of the parent nonprovisional application. However, if a claim in a continuation-in-part application recites a feature which was not disclosed or adequately supported by a proper disclosure under 35 U.S.C. 112 in the parent nonprovisional application, but which was first introduced or adequately supported in the continuation-in-part application, such a claim is entitled only to the filing date of the continuation-in-part application. See *In re Chu*, 66 F.3d 292, 36 USPQ2d 1089 (Fed. Cir. 1995); *Transco Products, Inc. v. Performance Contracting Inc.*, 38 F.3d 551, 32 USPQ2d 1077 (Fed. Cir. 1994); *In re Von Lagenhoven*, 458 F.2d 132, 136, 173 USPQ 426, 429 (CCPA 1972); and *Chromalloy American Corp. v. Alloy Surfaces Co., Inc.*, 339 F. Supp. 859, 874, 173 USPQ 295, 306 (D. Del. 1972).

### *Drawings*

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 39, 41, 43, 45 and 47 (included in the range 38-48, e.g., on page 4, line 19 and page 5, line 9); 131 and 133 (included in the range 130-134, e.g., on page 7, lines 11, 13 and 22); 233, 235 and 237 (included in the

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range 232-238, e.g., on page 12, line 25 and page 13, line 2). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. Alternatively, Applicant may overcome this objection by amending the specification to recite "switches 38, 40, 42, 44, 46 and 48", "queues 130, 132 and 134" and "buffers 232, 234, 236 and 238" instead of the presently recited "switches 38-48", "queues 130-134" and "buffers 232-238", respectively. The objection to the drawings will not be held in abeyance.

### *Claim Objections*

3. Claims 1, 4 and 17 are objected to because of the following informalities: "queuing identity of a virtual connection" should be changed to, e.g., "queuing the identity of a virtual connection". Appropriate correction is required.

### *Claim Rejections - 35 USC § 103*

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,148,001 to Soirinsuo et al. in view of U.S. Patent No. 6,026,090 to Benson et al.

Regarding claims 1, 10 and 17, Soirinsuo teaches a method for merging a plurality of virtual connections (e.g.,  $VCC_1$ - $VCC_n$  in FIG. 4) to form a merged virtual connection (e.g., 450), comprising: buffering cells of each of the plurality of virtual connections into a corresponding one of a plurality of cell buffers (e.g., see col. 10, lines 58-60), wherein each of the plurality of virtual connections is identified by a virtual connection identifier (e.g., VCI 712 in FIG. 7); queuing the identity of a virtual connection when cells that constitute a complete packet are buffered in a cell buffer (e.g., via switch controller comprising state machine 1130, see col. 10, lines 16-18); obtaining prioritization information for the merged virtual connection (e.g., service classes, see col. 7, lines 37-50; and payload type PT, see col. 9, lines 7-32); and generating a cell stream for the merged virtual connection based on the prioritization information and virtual connection identities, wherein the merged virtual connection is identified by a merged virtual connection identifier (e.g., see VPI/VCI Translation 934 in FIG. 9), wherein each cell in the cell stream includes the merged virtual connection identifier. While Soirinsuo may not specifically disclose queuing the identity (e.g., VCI) in a specific queue configuration, Soirinsuo teaches the step of scheduling virtual connections in accordance with the completion of buffered packets (e.g., see col. 9, lines 15-16) via a switch controller (e.g., see col. 10, lines 16-29). Furthermore, Soirinsuo discloses that those skilled in the art will recognize that other methods of obtaining the state of the received cells may be used without departing from the scope of the invention (col. 10, lines 18-21). Benson also teaches a method for receiving cells, and further, specifically teaches queuing an identifier in a queue (e.g., in the form of complete pointer 128) when cells that constitute a complete queue are buffered in a corresponding cell buffer (e.g., complete queue 124, see col. 4, line 40 – col. 6, line 50 with reference to FIG. 2). Benson further teaches that it

is well known in the art to also identify when cells that constitute a complete packet are buffered (e.g., see col. 2, lines 58-67), when suitable memory is available. The teachings of Benson provide improvements in ATM communication such as reduced memory requirements and lower latency (e.g., see col. 2, lines 66-67). Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to apply the teachings of Benson to the method of Soirinsuo in order to reduce memory requirements and reduce latency in ATM communications.

Regarding claims 2, 14 and 18, Soirinsuo teaches dequeuing cells from the plurality of buffers to produce the cell stream, wherein dequeuing of the cells is based on the prioritization information (e.g., see col. 9, line 33 – col. 10, line 65).

Regarding claims 3, 11, 13 and 19, Soirinsuo teaches each virtual connection comprises prioritization information which includes class prioritization information (e.g., service classes, see col. 7, lines 37-50; and payload type PT, see col. 9, lines 7-32).

Regarding claims 4, 12 and 20, as discussed above regarding claims 1, 10 and 17, Benson teaches the plurality of queues is a linked list configuration (e.g., see col. 5, lines 5-15 and FIG. 2 regarding pointer 128).

Regarding claims 5 and 21, Soirinsuo teaches the prioritization information allocates available bandwidth on the merged virtual connection based on class by teaching the prioritization information comprises service classes in accordance with various bit rate type requirements (e.g., CBR, VBR, see col. 7, lines 37-50).

Regarding claims 6 and 22, Soirinsuo teaches prioritization information further comprises referencing a prioritization table (e.g., scheduler supporting priorities, see col. 10, lines 22-42)

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that stores and accessing sequence (e.g., buffer state list or weighted scheduling) for the plurality of queues.

Regarding claims 7 and 23, Soirinsuo teaches generating the cell stream such that cells corresponding to different packets that are combined to produce the merged virtual connection are not intermingled (e.g., see col. 10, lines 29-35).

Regarding claims 8 and 24, Soirinsuo teaches detecting an end of message indication that indicated a final cell for the complete packet (e.g., see col. 9, lines 7-8).

Regarding claim 9, as discussed above regarding claim 1, Soirinsuo teaches generating a cell stream by combining the cell stream of a first virtual connection (e.g.,  $VCC_1$ ) with a cell stream of at least a second virtual connection (e.g.,  $VCC_2$ ), wherein the virtual connection identifier corresponding to the second virtual connection is different than the first virtual connection identifier. While Soirinsuo may not specifically disclose that, e.g., a first virtual connection (e.g.,  $VCC_1$ ) comprises a merged virtual connection and that the merged virtual connection is further merged with a second virtual connection, Soirinsuo teaches the method of providing a merged virtual connection (e.g., 450  $VCC_{1-n}$ ) comprising a plurality of virtual connections. At the time of the invention it would have been obvious to one of ordinary skill in the art to utilize a first virtual connection (e.g.,  $VCC_1$ ) comprising a merged virtual connection such as the merged virtual connection taught by Soirinsuo (e.g., 450  $VCC_{1-n}$ ) in order to accommodate additional virtual connections.

Regarding claims 15 and 16, Soirinsuo teaches the virtual connection merging system is included in a portion of a communication switch (e.g., see col. 10, lines 35-42). While Soirinsuo may not specifically disclose the location of the virtual connection merging system is limited to

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specifically either the ingress portion or egress portion of the communication switch, it is well known in the art for such a system to be located in the ingress or egress portion of a communication switch. That is, the teachings of Soirinsuo are clearly applicable for ingress and/or egress portions of a communication switch. Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to locate the system of Soirinsuo in the ingress or egress portion of the communication switch as is well known in the art.

### *Conclusion*

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 5,689,500 to Chiussi et al. discloses a queue processor coupled with configurable linked lists,

U.S. Patent No. 6,104,715 to Basso et al. discloses a method of merging data cells in an ATM network, and

U.S. Patent No. 6,195,355 to Demizu discloses a method of merging virtual connections.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin M Philpott whose telephone number is 703.305.7357. The examiner can normally be reached on M-F, 9:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy D Vu can be reached on 703.308.6602. The fax phone numbers for the



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organization where this application or proceeding is assigned are 703.872.9314 for regular communications and 703.872.9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703.305.4750.

Justin M Philpott



June 30, 2003



HUY D. VU  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600